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Feature Article - Unemployment and participation rates in Australia: a cohort analysis

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INTRODUCTION

A person's experience of the labour market will vary according to a number of factors, including the economic conditions at any given time, and their age. For example, the chance of someone finding a job decreases during a recession, while the likelihood of participating in the labour force varies as circumstances change, particularly in relation to family and education commitments. Factors affecting someone's peer group can also have a similar influence on labour market activity — people of different generations may have different expectations and experiences.

COHORT ANALYSIS

This article presents the results of an analysis of unemployment and labour force participation rates, based on following the labour market outcomes of successive groups of individuals over time, using data from the Labour Force Survey. Twenty-one groups (birth cohorts) of people were included, with each group born in successive years between 1937 and 1957. Thus, the analysis used data for the June of each year from 1981 to 2001, including persons aged 24 to 44 in 1981, 25 to 45 in 1982, and so on, to including persons aged 44 to 64 in 2001.

The analysis (a regression-based decomposition analysis) disentangles the effects of three separate components which can influence unemployment and labour market participation — year effect, age effect and cohort effect.

Year effect

This is the effect that the **year** had on any individual's chances of being unemployed or participating in the labour force (whatever their age). The year effect captures movements over time that arise from the economic cycle. During periods of strong economic growth, unemployment will, in most cases, decrease for all age groups, while during economic downturns, unemployment will tend to move upwards for all age groups. Participation rates could be expected to move in the opposite direction to unemployment.

Age effect

This is the effect that a person's **age** had on their chances of being unemployed or participating in the labour force (whatever the year). The age effect captures movements over the life cycle. Usually younger people experience higher levels of unemployment than those in older age

groups. Their level of unemployment then drops as they gain increased levels of education and work experience. It begins to rise again for ages closer to retirement age. Again, participation rates could be expected to move in the opposite direction.

Cohort effect

This is the effect that the **cohort** into which a person was born had on their chances of being unemployed or participating in the labour force (whatever the year and whatever their age). The cohort effect captures movements in the unemployment rate that are exclusive to that particular cohort, and will influence unemployment rates for the particular cohort over the whole period. For example, women born in the 1930s have had different labour market experiences to those born in the 1950s, throughout the economic cycle.

Method

In each case values were estimated for all three effects. In other words, in year Y, the probability that an individual of age A, belonging to cohort C, is unemployed (or participates in the labour force) can be decomposed into three elements:

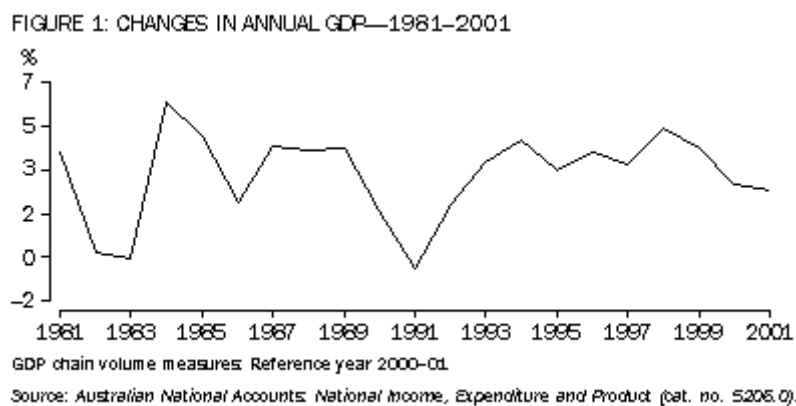
year effect (for year Y) + **age effect** (for age A) + **cohort effect** (for cohort C)

These effects represent the difference between the rate for a particular year, age or group, and: the average rate for the period (for the year effect); the rate for persons aged 24 (for the age effect); the rate for persons born in 1957 (for the cohort effect).

More details about the method of analysis are available from the ABS (see the contact information at the end of this article).

THE EFFECT OF THE YEAR

Examining the year effect for unemployment and participation rates reveals the influence of the business cycle on the labour market. Figure 1 shows the peaks and troughs of the business cycle, measured by percentage year-on-year changes in Australia's gross domestic product (GDP), between 1981 and 2001. During this period there were two recessions in Australia, around 1982 and 1991.



Unemployment

During periods of economic growth the unemployment rate tends to fall, while the unemployment rate rises during recessionary periods when there is a reduction in the demand for labour. Figure

2 shows the effect the year had on unemployment, after controlling for age and cohort effects — the coefficients of the year effect are expressed in percentage point changes from the average unemployment rate over the period.

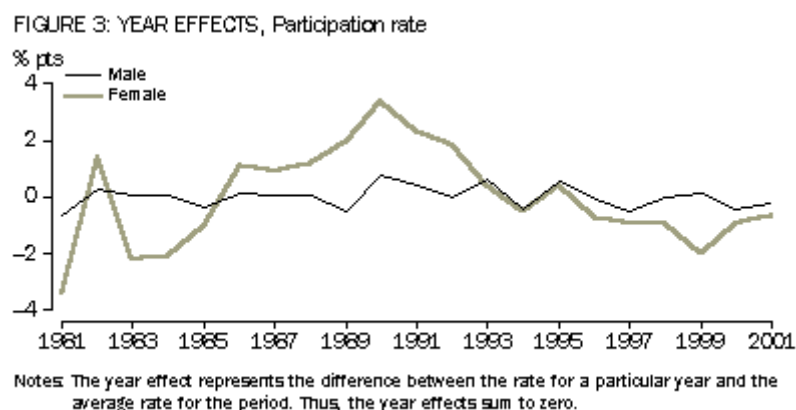


The year effect follows the pattern of the business cycle shown in Figure 1, with peaks in unemployment in the early 1980s and early 1990s — roughly corresponding with the years of recession, though tending to lag the troughs of the recession slightly.

When compared to men, unemployment among women seems less strongly associated with the business cycle, as the peaks and troughs tend to be less extreme. This corresponds with other studies which show that during recessionary periods unemployed men tend to stay in the labour force while unemployed women tend to exit the labour force (e.g. Gregory, R. (1991), 'Jobs and Gender: A Lego Approach to the Australian Labour Market', **Economic Record**, 67 (supplement), pp 20-40.).

Participation

Figure 3 shows the year effect for men and women's labour force participation. Comparison with figure 1 shows that women's labour force participation roughly follows the business cycle, with troughs at similar points, although the participation rate for women has varied less since the early 1990s. The year effect for men is not statistically significant, indicating the male participation rate (unlike unemployment) is not strongly influenced by the business cycle. Women's decisions to participate in the labour market appear to be more strongly influenced by the economic cycle than men's, as noted above. This may reflect a propensity to exit the labour market rather than remain unemployed when jobs become harder to find.

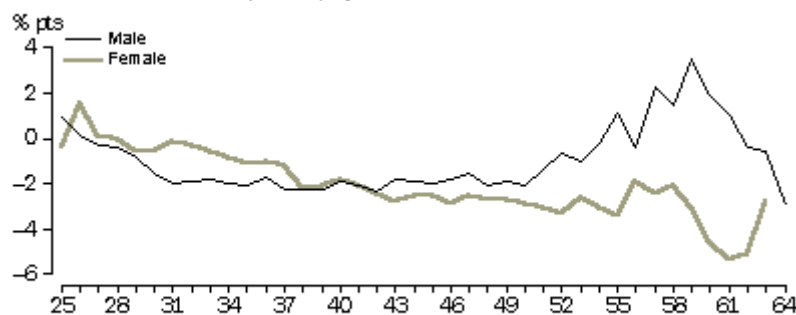


THE EFFECT OF AGE

Unemployment

The relationship between age and unemployment, after controlling for year and cohort effects, is shown in Figure 4. Younger workers, who have only recently entered the labour market, experience higher levels of unemployment than middle aged workers, who are better established in employment. Among men, the relationship between age and unemployment remains relatively steady until their early 50s when it begins to rise, peaking at age 59. The age effects for women are considerably different, with the unemployment rate continuing to decline after age 50. Again this could be explained by women being more likely to exit the labour market than to remain unemployed. The sharp drop in unemployment rates among both men and women close to age 60 may be attributed to workers retiring from the labour market.

FIGURE 4: AGE EFFECTS, Unemployment rate

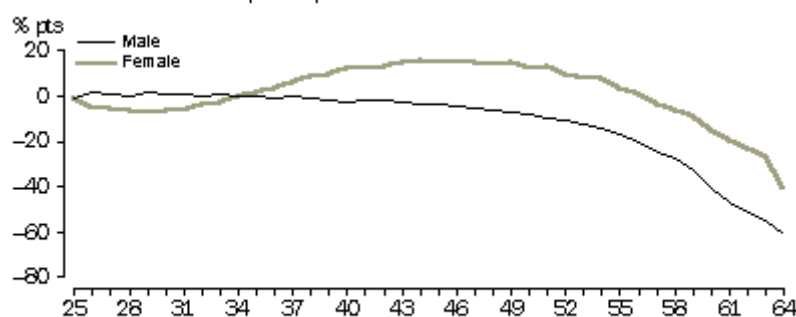


Notes: The age effect represents the difference between the rate for a particular age and the rate for persons aged 24 (which thus has an effect of zero and is excluded from this graph).

Participation

The relationship between age and participation, after controlling for year and cohort effects, is shown in Figure 5. Among men, labour force participation gradually declines with age until they reach their mid 50s, at which point it begins to decline more sharply. The participation rate for women is lower during the years that many women have children — around 25 to 35 years of age — but then increases until age 50, when it then falls in a similar manner to the male rate. The lower participation rates for people aged over 50 could be attributed to various factors, including voluntary early retirement, health problems, and choosing to leave the labour force rather than remain unemployed.

FIGURE 5: AGE EFFECTS, Participation rate



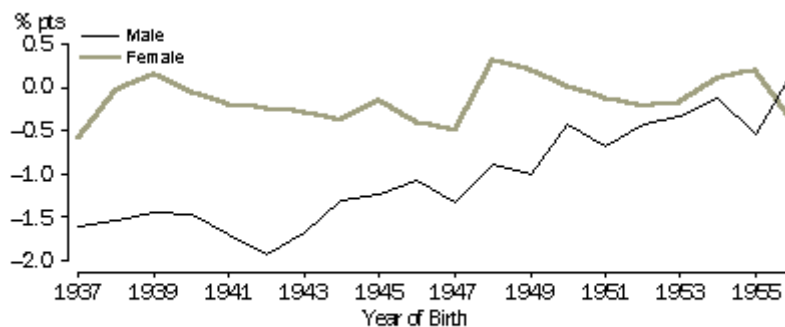
Notes: The age effect represents the difference between the rate for a particular age and the rate for persons aged 24 (which thus has an effect of zero and is excluded from this graph).

THE EFFECT OF THE COHORT

Unemployment

When compared to the age and year effects, the influence someone's cohort group has on their chances of being unemployed is relatively small (see Figure 6). However, the cohort effect for unemployment is statistically significant for men.

FIGURE 6: COHORT EFFECTS, Unemployment rate



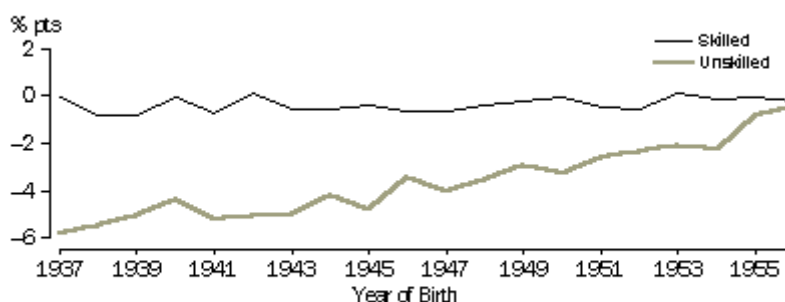
Notes: The cohort effect represents the difference between the rate for a particular cohort and the rate for persons born in 1957 (which thus has an effect of zero and is excluded from this graph).

The male cohort effect indicates that, after controlling for age and year effects, older cohorts (that is, men born before around 1945) experienced, on average, lower unemployment rates than their younger counterparts. For example, over the 20 year period, the unemployment rate for men in the 1956 birth cohort is around 0.2 percentage points higher on average than the unemployment rate for men born in 1937.

The cohort effect on unemployment rates was stronger for unskilled men than skilled men, as shown in Figure 7. Here, the skilled group is defined as comprising people who completed high school as well as those who received some post school qualification. Among skilled men, there was little difference between the cohorts. The unskilled group comprised those who did not complete high school. The results show that, after controlling for the effects of age and year, unemployment tended to be higher among unskilled men from later generations.

FIGURE 7: COHORT EFFECTS, Unemployment rate—Educational attainment:

Males

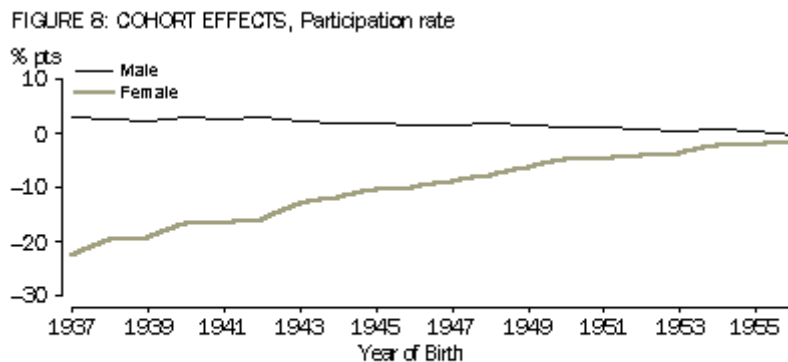


Notes: The cohort effect represents the difference between the rate for a particular cohort and the rate for persons born in 1957 (which thus has an effect of zero and is excluded from this graph).

Participation

Figure 8 shows the relationship between a person's cohort and their chances of participating in the labour force. Although the cohort effect is significant for both men and women, it is much stronger for women. After controlling for age and year effects, men born in 1937 experienced participation rates 3 percentage points higher on average over the period than men born in 1956.

Conversely, women born in 1936 experienced participation rates 23 percentage points lower on average than women born in 1956, after controlling for age and year effects.



Notes: The cohort effect represents the difference between the rate for a particular cohort and the rate for persons born in 1957 (which thus has an effect of zero and is excluded from this graph).

Changing employment opportunities for women resulting from changing social attitudes may help to explain the increasing trend in labour market participation among younger cohorts. Employment growth between 1981 and 2001 has been skewed towards females. Between 1981 and 2001, female employment as a proportion of total employment increased from 37% to 45%. The driving force behind this growth in female employment is from increased part-time employment, especially in the services sector.

FURTHER INFORMATION

For more information about the analysis please contact Ravi Ravindiran on Canberra 02 6252 7039, or via email at <Ravi.Ravindiran@abs.gov.au>. For information about the Labour Force Survey please contact Peter Bradbury on Canberra 02 6252 6565, or via email at <Peter.Bradbury@abs.gov.au>

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